

The Cuban form originally described as *flabellum* by Cooke will apparently take the following synonymy:

Pecten vaughani, var. *flabellum* Cooke, Carnegie Inst. Washington, Publ. 291, 1919, p. 134, pl. 8, figs. 6a, 6b, 7. "La Cruz and Santiago, Cuba." "Oligocene."

Pecten vaun, var. *flabellum* Cooke, NAUTILUS, Vol. 34, No. 4, April, 1921, p. 137. "La Cruz marl (middle Miocene), La Cruz and Santiago, Cuba."

[?] *Chlamys (Aequipeecten)*, sp. cf. *C. (A.) flabellum* (Cooke), Woodring, Geol. Republic of Haiti, Repub. Haiti, Dept. Publ. Works, 1924, p. 156. Port de-Paix, Tortue Island. Upper Oligocene.

Pecten kunkumana, var. *flabellum* Cooke, Maury, Bull. Amer. Paleo., Vol. 10 (Bull. 42), 1925, p. 241 (Bull. p. 89). "La Cruz and Santiago, Cuba." [*P. kunkumana* Maury, 1925, is an exact synonym of *P. vaun* Cooke 1921=*P. vaughani* Cooke, 1919, not *P. vaughani* Arnold, 1906.]

Not *Ostrea flabellum* Gmelin, in Linn. Syst. Nat. Ed. 13, 1790, pp. 3320, 3321. [= *Pecten flabellum*.] According to Bavay (Jour. de Conch., Vol. 58, No. 4, 1911, p. 319) this is *P. gibbus* of Lamarck, not *P. gibbus* Linnaeus. Bavay also considered that "*P. Tissotii* Bernardi=*P. flabellum* Gmelin, *juvencis*." According to Dall (NAUTILUS, Vol. 38, No. 4, 1925, p. 113), *Ostrea flabellum* Gmelin is a synonym of *P. gibbus* Linnaeus.

Not *Pecten flabellum* Bosc, Hist. Nat. Coq., s. à. Deterville, Ed. Buffon, Moll., Vol. 2, 1801, p. 266. "On ignore son pays natal." A reference is given to Regenfuss, Conch. 1, tab. 9, fig. 33.

Not *Pecten flabellum* Defrance, Dict. Sci. Nat., Vol. 38, 1825, p. 265. [According to Sherborn.]

ON THE SYNONYMY AND DISTRIBUTION OF PLANORBIS ANATINUS ORBIGNY

BY CARLOS GUILLERMO AGUAYO

While studying the Planorbidae of Cuba for a paper in preparation on the fresh water mollusks from that Island, the writer has found it necessary to synonymize as *Drepanotrema anatinum* (Orb.) several of the described species belonging to this genus hitherto considered as different

forms, a fact that shows the wide distribution of this Neotropical planorb. Believing the following notes may prove useful to those interested in West Indian freshwater shells, I am publishing them at Dr. Pilsbry's suggestion, in advance of the above mentioned paper.

I wish to thank Dr. Pilsbry for his help in checking some of the synonyms as well as for obtaining Major M. Connolly's comparison of Cuban *P. esperanzensis* with the type lot of *P. anatinus*.

DREPANOTREMA ANATINUM (Orbigny)

Planorbis anatinus Orb., 1835, Mag. de Zool., Vol. 2, Cl. 5, No. 62, p. 28 (Rio Paraná, Argentina); 1837, Voyage dans l'Amérique Méridionale, Vol. 5 (3), Moll., p. 351, pl. 45, f. 17-20; Clessin, 1885, Syst. Conch. Cab., Vol. 17, p. 70, pl. 15, f. 5 (Brasiliën, Inseln des Panama bei Bajada).

Drepanotrema anatinum H. B. Baker, 1930, Occ. Pap. Mus. Zool. Univ. Mich., No. 210, p. 51 (Bejuma, Venezuela).

Planorbis haldemani C. B. Adams, 1849, Contr. to Conch., p. 43 (Jamaica); Shuttleworth, 1854, Mitth. der Naturf. Ges. Bern, p. 97, (Pto. Rico); Crosse, 1892, Journ. de Conch., Vol. 42, p. 36 (Pto. Rico); E. A. Smith, 1895, Pr. Malac. Soc. London, Vol. 1, p. 320, pl. 21, f. 22 (Trinidad); E. A. Smith, 1896, Journ. de Conch., Vol. 8, p. 245 (Trinidad); Dall & Simpson, Bull. U. S. Fish. Com., Vol. 1, p. 370 (Pto. Rico).

Planorbis esperanzensis Tryon, 1866, Amer. Journ. of Conch., Vol. 2, p. 10, pl. 2, f. 11-13 (Esperanza, Cuba); Arango, Contr. Fauna Malac. Cuba, p. 278 (Plantation Ingenio Esperanza, Pinar del Rio, Cuba); Crosse, 1890, Journ. de Conch., Vol. 42, p. 261 (Plantation Esperanza, Pinar del Rio, Cuba).

? *Planorbis isabel* Morelet, in H. and A. Adams, 1858, Gen. Moll., Vol. 2, p. 264 (nom. nud.).

Planorbis isabel "Morelet" Sowerby, 1879, Conch. Icon., Vol. 20, gen. *Planorbis*, pl. 12m, f. 101 a-b, sp. 101 (Mus. Brit.); H. B. Baker, 1923, Occ. Pap. Mus. Zool. Univ. Mich., No. 135, p. 2 (Laguna de Catemaco, southern Vera Cruz, Mexico).

Planorbis yzabalensis Crosse et Fischer, 1879, Journ. de Conch., Vol. 27, p. 342 (lake Yzabal and river Usumasinta, Guatemala); Clessin, 1885, Conch. Cab., Band. 1, Vol. 17, p. 217 (Guatemala et Mexico); Fischer and Crosse, 1894,

Miss. Scient. Mex., part. 7, Vol. 2, p. 75, pl. 33, f. 2-2c (Tabasco, Mexico; Izabal and Usumasinta, Guatemala). Von Martens, 1899, Biol. Centr. Amer., Mollusca, p. 397 (Guatemala and Mexico).

? *Planorbis aracasensis* Gundlach, 1857, Malak. Bl., 4, p. 179 (Aracas, Trinidad, Cuba), (*sine desc.*); Arango, 1880, Fauna Malac. Cuba, p. 136 (Trinidad, Cuba), *sine desc.*; Crosse, 1890, Journ. de Conch., Vol. 42, p. 260 (Lagunes de Trinidad), *sine desc.*

Planorbis aracacensis "Gundl" Clessin, 1884, Conch. Cab., Band 1, Vol. 17, p. 143, pl. 15, f. 7 (Plantacion Esperanza, Pinar del Rio, Cuba).

Planorbis involutus "Dunker" Clessin, *loc. cit.* (as synonym of *Pl. aracacensis*).

Description.—The following is the original description of *Pl. anatinus* Orbigny. "Testa discoidea, globoso-compressa, tenui, laevigata, lucida, cornea, superne subtusque convexa, centro solum perforata; umbilicata, ad peripheriam rotunda; quatuor anfractibus, spiris cunctis amplexantibus; apertura compressissima, arcuata, obliqua, semi-lunari. Alt. 1 millim., amp. 2 millim. Habit. ripis Paraná (Republica Argentina)."

The type locality was not well specified in the original description, but later on (1835 ?, Voyage dans l'Amérique Méridionale, Moll. p. 351), Orbigny remarked: "Nous avons rencontré cette espèce dans l'estomac des canards que nous avons tués sur les îles mêmes du Rio Paraná, un peu au dessous de la ville de la Bajada, capitale de la province d'Entre Rios. Nous l'avons recherchée dans les mêmes lieux; et, après beaucoup de peine, nous l'avons rencontrée au sein des lacs du centre des îles, parmi les plantes aquatiques. Elle paraît y être rare."

Remarks.—A study of the type lots of *P. haldemani* Adams and *P. esperanzensis* Tryon, now in the Academy of Natural Sciences of Philadelphia, shows the complete identity of both species. The last has also the spiral punctures described by Adams for *haldemani*, though more or less obsolete in some specimens, as found likewise in Adams species.

Dr. H. B. Baker, who has studied some *Planorbis* from

Venezuela identified as *P. anatinus*, considered them identical with the above-mentioned species. For this reason, cotypes of *P. esperanzensis* were sent to Major Connolly of London, with the request that he compare them with the cotypes of *P. anatinus* in the British Museum. Major Connolly kindly sent the following information: "I have carefully compared your examples of *Plan. esperanzensis* Tryon with the remains of the type set of *Plan. anatinus* Orb. and find them *absolutely* identical, except that the latter are infinitesimally less mature; there is no use entering into details, because there is no difference whatsoever between the two species."

The *Pl. aracacensis* "Gundl" Clessin, described from the sugar Plantation "Esperanza," Pinar del Rio, Cuba (also the type locality for *P. esperanzensis*) shows by its description, figures and type locality its identity with the last species.

It seems convenient to remark here that the lots of *Pl. aracacensis* Gundl. ms., which I have seen in several collections, belong to two different species: Some specimens (U. S. National Museum), from Trinidad, Cuba, are unquestionably *D. anatinum* Orb., but other sets, also from Trinidad, Cuba (Academy of Natural Sciences of Philadelphia and American Museum of Natural History), belong to an entirely different species of the genus *Planorbula*, which is near *Planorbis arakanensis* "Gould" Sowerby (Reeve, Conch. Icon., Vol. 20, *Planorbis*, pl. 12, f. 100. a, b, sp. 100), from Trinidad. I am convinced that the name used by Sowerby was the result of an unfortunate three-fold mistake in copying a label of *P. aracacensis* Gundl., from Trinidad, Cuba.

Planorbis isabel "Morelet" Sowerby (misspelling for Yzabal), shows by its figures and description its similarity to *P. anatinus* Orb. It was considered by Clessin (*op. cit.* p. 143) as a synonym of *P. aracacensis*, though erroneously giving priority to his species, which was described five years later. Clessin remarked also its similarity to *P. anatinus*.

The identity of *P. yzabalensis* Crosse and Fischer, de-

scribed from Morelet material, with *P. isabel* "Morelet" Sowerby has been suggested by von Martens, 1899 (*loc. cit.*)

Localities.—In addition to the localities mentioned in the synonymic references given above, the following records may prove useful:

Cuba: Rio Guaso, Guantánamo, Ramsden coll. (Ac. Nat. Sci. Phila.); Marianao, Habana, S. N. Rhoads coll. (Ac. Nat. Sci. Phila.).

Haiti: Rio Guayubin, Sabaneta, Santo Domingo, Olsson coll. (Ac. Nat. Sci. Phila.); Lake Miragoane, Haiti, Eyerdam coll. (Mus. of Comp. Zool. Harvard).

Panama: Gamboa, Canal Zone, Zetek coll. (Ac. Nat. Sci. Phila.).

Brazil: Pará, Dr. Fred Baker coll. (Ac. Nat. Sci. Phila.).

This species seems to be the most widely spread planorbid of the Americas, as its range of distribution so far known covers Argentina, Venezuela, northeastern Brazil, Panama, Guatemala, Mexico, Cuba, Jamaica, Haiti, Porto Rico and Trinidad. It has been found very frequently associated with *Drepanotrema lucidum* Pfr., and may sometimes have been confused with young specimens of that species. It is therefore quite possible that *D. anatinum* will be found within the whole area of distribution of *D. lucidum*.

A NEW COLOR FORM OF LIGUUS FROM A NEW AREA OF THE FLORIDA EVERGLADES

BY MIZPAH OTTO DE BOE

LIGUUS FASCIATUS SOLISOCCASUS, nov. subsp. Pl. 6, figs. 5, 6.

Shell: Small, thin, elongate, polished. Whorls $6\frac{1}{2}$ to $7\frac{1}{2}$, slightly convex. Columella thin, very slightly twisted, and in a few specimens slightly truncated. In the holotype the columella is perfectly straight. Palatal lip emarginate. Parietal wall thinly calloused. Sutures moderately well impressed. Sculpture of the shell consists of very narrow growth lines. *Coloration:* Ground color ochraceous yellow